

REMARKS

Applicants amended claims 19, 22-26, and 34, added new claims 48-61, and cancelled claims 27-30 and 33 without prejudice. Claims 19-26, 31, 32, 34-36, and 48-61, of which claims 19 and 48 are independent in form, are pending in this application. Applicants address the Examiner's rejections below.

35 U.S.C. § 102(e)

The Examiner rejected claims 19-30 and 33-36 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,165,644 ("Nimon"), as evidenced by U.S. Patent Application No. US 2003/0143112 A1 ("Suslick"). Applicants have cancelled claims 27-30, thereby obviating the rejection of those claims. As amended, claims 19-26 and 33-36 recite an electrochemical cell comprising an electrolyte containing lithium perchlorate and a lithium salt selected from the group consisting of LiTFS, LiTFSI, and LiPF₆.

Nimon does not describe or suggest an electrochemical cell comprising an electrolyte that contains both lithium perchlorate and LiTFS, LiTFSI, or LiPF₆. While Nimon provides a list of examples of optional lithium salts for an electrolyte (e.g., lithium perchlorate, LiPF₆), Nimon does not describe or suggest the use of more than one of these lithium salts in an electrolyte. (See, e.g., Nimon, col. 10, lines 13-24.) In other words, Nimon does not describe or suggest using both lithium perchlorate and another lithium salt (such as LiPF₆) in an electrolyte. In fact, Nimon explains that even including one of the listed lithium salts in the electrolyte is optional because the battery in Nimon preferably includes sulfur, and "upon discharge of the battery the metal sulfides or polysulfides formed can act as electrolyte salts" (See Nimon, col. 2, lines 29-40; col. 10, lines 20-24). Thus, Applicants request the withdrawal of the § 102(e) rejection of claims 19-30 and 33-36 on the basis of Nimon.

35 U.S.C. § 103(a)

The Examiner rejected claims 31 and 32 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,165,644 ("Nimon"), and further in view of U.S. Patent No. 6,352,793

("Kitoh"). Claims 31 and 32 depend from claim 19 which, as amended, recites an electrolyte containing lithium perchlorate and a lithium salt selected from the group consisting of LiTFS, LiTFSI, and LiPF₆.

Nimon does not describe or suggest such an electrolyte, as described above, and Kitoh does not correct the deficiencies of Nimon. While Kitoh describes, for example, the preparation of an electrolyte for a battery by dissolving LiPF₆ in a mixed solution of ethylene carbonate and diethyl carbonate, Kitoh does not describe or suggest a battery electrolyte that includes lithium perchlorate and LiTFS, LiTFSI, or LiPF₆. (See, e.g., Kitoh, col. 6, lines 30-32). In fact, Kitoh does not even mention using lithium perchlorate in an electrolyte. Thus, Applicants request the withdrawal of the § 103(a) rejection of claims 31 and 32 on the basis of Nimon and Kitoh.

New Claims

New claims 48-61 are also patentable over the cited references because none of the references, alone or in combination, discloses or suggests an electrochemical cell comprising a cathode containing an electrolyte comprising salts consisting essentially of lithium salts and lithium perchlorate. While Nimon describes an electrolyte that includes Li₂S₈ and LiTFSI, Nimon does not describe or suggest an electrolyte that includes lithium perchlorate and at least two other lithium salts. (See Nimon, col. 3 lines 24-43).

Double Patenting

The Examiner provisionally rejected claims 19-36 under the doctrine of obviousness-type double patenting as unpatentable over claims 12-24 of copending and commonly owned Application No. 10/361,945 (US 2003/0124421 A1). Applicants request that the rejection be reconsidered in view of the amendments to the present claims. If the Examiner maintains the rejection, and the claims are otherwise allowable, Applicants will consider submitting an appropriate terminal disclaimer at that time.

Applicants believe that the claims are in condition for allowance, which action is requested.

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Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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